

What is claimed is:

1. An electronic endoscope apparatus comprising:
  - an electronic endoscope equipped with an image pickup device;
  - a main unit which is connected with the electronic endoscope and includes a processor unit;
  - a sample/hold circuit which samples and holds a video signal obtained by the image pickup device;
  - a common power/signal line which connects the electronic endoscope with the main unit;
  - a power supply circuit which is installed in the main unit and supplies power to the electronic endoscope via the common power/signal line;
  - a scope-side waveform superimposing circuit which superimposes a video signal obtained by the image pickup device on the power transmitted through the common power/signal line and superimposes scope-side reference pulses on a plurality of horizontal scanning blanking periods in a field or frame of the video signal;
  - a processor-side waveform superimposing circuit which superimposes processor-side reference pulses on a plurality of horizontal scanning blanking periods that exist in a field or frame of the video signal supplied via the common power/signal line and that are not superimposed with the scope-side reference pulses;

a processor-side separating circuit which separates the video signal and scope-side reference pulses superimposed on the common power/signal line;

a processor-side synchronizing signal generator which forms a signal synchronized with the scope-side reference pulses outputted from the processor-side separating circuit;

a scope-side separating circuit which separates the processor-side reference pulses superimposed on the common power/signal line; and

a scope-side timing generator which forms a signal synchronized with the processor-side reference pulses outputted from the scope-side separating circuit.

2. The electronic endoscope apparatus according to claim 1, wherein oscillation frequency of an oscillator installed in the processor-side synchronizing signal generator differs from oscillation frequency of an oscillator installed in the scope-side timing generator.

3. The electronic endoscope apparatus according to claim 2, wherein a crystal oscillator is installed in one of the processor-side synchronizing signal generator and the scope-side timing generator and an LCR oscillator is installed in the other of them.

4. The electronic endoscope apparatus according to claim 1, comprising:

an electromagnetic coupler which is installed instead of the common power/signal line and connects the electronic endoscope and the main unit electromagnetically; and

a power supply circuit which is installed in the main unit and supplies AC power to the electronic endoscope via the electromagnetic coupler,

wherein the video signal, scope-side reference pulses, and processor-side reference pulses are superimposed on the AC power.

5. An electronic endoscope apparatus comprising:

an electronic endoscope equipped with an image pickup device;

a main unit which is connected with the electronic endoscope and includes a processor unit;

a common power/signal line which connects the electronic endoscope with the main unit;

a power supply circuit which is installed in the main unit and supplies power to the electronic endoscope via the common power/signal line;

a scope-side waveform superimposing circuit which superimposes a video signal obtained by the image pickup device on power transmitted through the common power/signal line and superimposes an information signal about the electronic endoscope on a predetermined blanking period in the video signal;

a processor-side separating circuit which separates the video signal and the information signal about the electronic endoscope superimposed on the common power/signal line; and a signal processing circuit which performs various types of processing on the video signal based on the information signal about the electronic endoscope obtained from the processor-side separating circuit.

6. The electronic endoscope apparatus according to claim 5, comprising:

an electronic shutter circuit which controls charge accumulation time in the image pickup device as electronic shutter speed;

a processor-side waveform superimposing circuit which superimposes an electronic shutter control signal on a predetermined blanking period in the video signal supplied through the common power/signal line; and

a scope-side separating circuit which separates the electronic shutter control signal superimposed on the common power/signal line.

7. The electronic endoscope apparatus according to claim 6, wherein the scope-side waveform superimposing circuit superimposes scope-side reference pulses on a blanking period of the first horizontal line in the first field or first frame of the video signal and superimposes the information signal about the electronic endoscope on predetermined blanking

periods of the second and later horizontal lines in the first field or first frame while the processor-side waveform superimposing circuit superimposes the electronic shutter control signal on a predetermined blanking period in the second or later field or frame of the video signal.

8. The electronic endoscope apparatus according to claim 5, comprising:

an electromagnetic coupler which is installed instead of the common power/signal line and connects the electronic endoscope and the main unit electromagnetically; and

a power supply circuit which is installed in the main unit and supplies AC power to the electronic endoscope via the electromagnetic coupler,

wherein the video signal, scope-side reference pulses, and processor-side reference pulses are superimposed on the AC power.